

TECHNICAL NOTES - XXXXXX Apartments HVAC Quantity Take-Off				
Optimar Consulting Inc., Preconstruction & Estimation				
1. PROJECT INFORMATION				
Client	XXXXXX			
Project	XXXXXX			
Discipline	HVAC			
Scope	Quantity Take-Off (QTO) ONLY - No pricing, rates, or costs of any kind			
Governing Code	XXXXXX			
Prepared By	Optimar Consulting Inc. - Preconstruction & Estimation Lead, New Delhi			
Drawings Used	M1.0a (Overall Bldg), M1.1a (1BD Units), M1.1b (2BD Units), M3.1 (Schedules), Full Architectural Set			
2. BUILDING & UNIT MIX				
Total Buildings	5 buildings × 3 storeys each = 15 total floor levels			
Building Types	Type I: Buildings 1, 4, 5 Type II: Buildings 2, 3			
Total Units	90 dwelling units			
1BD/1BA Units	30 total - 28 Standard (all 3 floors) + 2 Accessible (1st floor only)	⚠ AHU-1 (1.5T) + CU-1 per unit		
2BD/2BA Units	60 total - 57 Standard (all 3 floors) + 3 Accessible (1st floor only)	⚠ AHU-2 (2T) + CU-2 per unit		
Accessible Locations	1BD ACC: Bldg 2 Unit #14, Bldg 5 Unit #14 2BD ACC: Bldg 1 Unit #12, Bldg 3 Unit #12, Bldg 5 Unit #11	⚠ Ground floor ONLY. No 3-floor multiplier applied.		
3. MEASUREMENT BASIS & ASSUMPTIONS				
Floor Typicality	Floors 2 and 3 are fully typical to Floor 1 per drawings M1.1a and M1.1b. A ×3 floor multiplier has been applied to all standard unit quantities.			
Bldg Type Parity	Type I and Type II buildings share the same mechanical drawing set. Quantities per unit type are identical.			
Accessible Units	Accessible units have identical HVAC layout to standard units per M1.1a/M1.1b. Listed separately for clarity.			
Duct Insulation	Supply duct insulation per M3.1: R6 flex on all supply runouts. Rectangular supply and return ducts: acoustic liner 1".			
Equipment Spec	Drawings specify Daikin (ARUF and DX14SN series).HVAC Bid #784623 references Goodman as base equivalent.	⚠ Quantities taken from drawings as specified (Daikin).		
Condensate Drains	Condensate drain lines (Sch 40 PVC, AHU to hub drain HD-1) were measured and delivered under the Plumbing QTO, previously submitted to KMS.	⚠ Not duplicated in this HVAC deliverable.		
4. RFI LOG				
RFI #	Subject	Raised By / Date	Status	Resolution
RFI 01	Condensing Unit Mounting Location - Ground mount or roof mount?	Optimar Consulting Inc.	CLOSED ✓	Ground-mounted. Confirmed by Heather Moore, Kimbel Mechanical Systems.
5. SCOPE INCLUSIONS				
• Air Handling Units: AHU-1 (Daikin ARUF18B14, 1.5T) for 1BD AHU-2 (Daikin ARUF24B14, 2T) for 2BD				
• Condensing Units: CU-1 (Daikin DX14SN0181I, 1.5T) CU-2 (Daikin DX14SN0241I, 2T)				
• Exhaust Fans EF-1 (Greenheck SP-A125, 125 CFM) - 1 per 1BD bath, 2 per 2BD unit				
• Infrared Radiant Heater IRH-1 (Fostoria 222-A3-1/GS, 3.2 kW) - 1 per building, stair/breezeway				
• Supply Plenums 17×12 rectangular metal - 1 per unit (all types including accessible)				
• Programmable Thermostats - 1 per unit Safety Float Switches - 1 per unit				
• Dryer Vent Box with 4" wall cap - 1 per unit Bath exhaust wall cap - 1 per bath				
• R6 Flex Supply Duct - all supply runouts from plenum to grilles, per unit plan				
• Bath Exhaust Hard Duct (26ga metal) - EF-1 to exterior wall cap, per bath				
• Dryer Exhaust Hard Duct (26ga metal, 4" dia) - dryer vent box to wall cap, per unit				
• R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation - AHU to CU, per unit				
• Supply/Return Grilles & Registers: CR-1 (10×4), CR-2 (12×4), SRG-1 (20×12), SRG-2 (24×12)				
6. SCOPE EXCLUSIONS (per Client HVAC Bid #784623)				
• Hard supply ducting in common areas/breezeways Fire dampers Outside air ducting				
• Turning vanes Volume control dampers Transfer grilles				
• Kitchen exhaust fans and range hoods Lint traps Dryer booster fans				
• Concrete condenser pads Air handler stands Vibration isolation Seismic bracing				
• Sheet metal goosenecks / treated condenser posts (roof alternates)				
• Condensate drain insulation Condensate pumps				
• High voltage wiring (electrical scope) Gas piping Drywall/framing (GC scope)				
• Commissioning / testing & balancing Zoning components Humidifiers				
• Condensate drain lines - delivered under Plumbing QTO (previously submitted to KMS)				
• ANY PRICING, RATES, UNIT COSTS, OR TOTALS - this is a QTO-only deliverable				

XXXXXX APARTMENTS - HVAC QUANTITY TAKE-OFF

Client Name | Address | QTO Only - No Pricing

Discipline	HVAC	Scope	QTO Only- No Pricing	Governing Code	XXXXXX	RFI 01 Status	CLOSED - CU Ground Mount Confirmed
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BUILDING MIX

Buildings	Type I (Bldgs 1,4,5)	Type II (Bldgs 2,3)	Floors	Total Units	1BD Units	2BD Units	Accessible
5	3	2	3	90	30	60	5

#	Item Description	Specification / Model	Unit	Type I Qty	Type II Qty	Total Qty	Notes
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DUCTWORK

1	4" DIA DUCT	26ga Galvanised Steel	LF	552.75	368.50	921.25	
2	6" DIA DUCT	26ga Galvanised Steel	LF	1,407.21	938.14	2,345.35	
3	7" DIA DUCT	26ga Galvanised Steel	LF	4,635.12	3,090.08	7,725.20	
4	8" DIA DUCT	26ga Galvanised Steel	LF	1,331.34	887.56	2,218.90	
5	45° ELBOW (4" to 4")	Sheet Metal Fitting	EA	3.00	2.00	5.00	
6	45° ELBOW (6" to 6")	Sheet Metal Fitting	EA	54.00	36.00	90.00	
7	90° ELBOW (6" to 6")	Sheet Metal Fitting	EA	60.00	40.00	100.00	
8	90° ELBOW (7" to 7")	Sheet Metal Fitting	EA	372.00	248.00	620.00	
9	90° ELBOW (7" to 8")	Sheet Metal Fitting	EA	48.00	32.00	80.00	
10	90° ELBOW (8" to 8")	Sheet Metal Fitting	EA	30.00	20.00	50.00	
11	WYE-8" TO 6" DUCT	Sheet Metal Fitting	EA	54.00	36.00	90.00	

EQUIPMENT

12	AHU-1 (1.5 TON)	Daikin ARUF18B14 600 CFM 240V/1Ph	EA	18.00	12.00	30.00	1BD units
13	AHU-2 (2 TON)	Daikin ARUF24B14 800 CFM 240V/1Ph	EA	36.00	24.00	60.00	2BD units
14	CU-1 (1.5 TON)	Daikin DX14SN0181I 14 SEER 240V/1Ph	EA	18.00	12.00	30.00	1BD units
15	CU-2 (2 TON)	Daikin DX14SN0241I 14 SEER 240V/1Ph	EA	36.00	24.00	60.00	2BD units
16	EF-1 EXHAUST FAN	Greenheck SP-A125 125 CFM 120V/1Ph	EA	90.00	60.00	150.00	1 per 1BD, 2 per 2BD
17	THERMOSTAT	Proselect Programmable Factory with AHU	EA	54.00	36.00	90.00	1 per unit
18	IRH-1 INFRARED HEATER	Fostoria 222-A3-1/GS 3.2kW 240V/1Ph	EA	3.00	2.00	5.00	1 per building

AIR DEVICES

19	CR-2 SUPPLY REG (12x4)	Metal Fab MFSCR 12x4 Steel White	EA	252.00	168.00	420.00	
20	CR-1 SUPPLY REG (10x4)	Metal Fab MFSCR 10x4 Steel White	EA	90.00	60.00	150.00	
21	SRG-1 RETURN GRILLE (20x12)	Metal Fab 20x12 Face 22x14 Frame	EA	18.00	12.00	30.00	1BD units
22	SRG-2 RETURN GRILLE (24x12)	Metal Fab 24x12 Face 26x14 Frame	EA	36.00	24.00	60.00	2BD units

ACCESSORIES

23	SUPPLY AIR PLENUM (17x12)	Rect. Metal Plenum on top of AHU	EA	54.00	36.00	90.00	<i>1 per unit incl. ACC</i>
24	DRYER VENT WITH CAP (4")	4" Steel Duct + Plastic Wall Cap	EA	54.00	36.00	90.00	<i>1 per unit</i>
25	WALL VENT (EXHAUST FAN)	Manufacturer's Wall Vent - Bath Exhaust	EA	90.00	60.00	150.00	<i>1 per bath</i>

PIPING

26	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	R410A Copper 1/2" Elastomeric Insulation	LF	1,133.22	755.48	1,888.70	<i>RFI 01 confirmed: ground mount</i>
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 Condensate drain lines (Sch 40 PVC) are excluded from this deliverable - previously measured and submitted under the Plumbing QTO.

PROJECT- XXXXXX APARTMENTS									
S. No.	Item Description	Unit	Total Qty						
	TYPE-1					#	Type 1	No of Units	
	UNIT-1BD/1BA	15							
	DUCTWORK					1	UNIT-1BD/1BA	15	(as mentioned in coversheet)
1	7" DIA DUCT	LF	943.35			2	UNIT-1BD/1BA (ACC.)	3	(as mentioned in coversheet)
2	8" DIA DUCT	LF	346.50			3	UNIT-2BD/2BA	30	(as mentioned in coversheet)
3	6" DIA DUCT	LF	455.70			4	UNIT-2BD/2BA (ACC.)	6	(as mentioned in coversheet)
4	45° ELBOW (6" to 6")	EA	15.00			5	COMMON AREA	3	Bldg 1,4,5
5	90° ELBOW (6" to 6")	EA	15.00				Type 2		
6	90° ELBOW (7" to 7")	EA	75.00			1	UNIT-1BD/1BA	10	(as mentioned in coversheet)
7	90° ELBOW (7" to 8")	EA	15.00			2	UNIT-1BD/1BA (ACC.)	2	(as mentioned in coversheet)
8	WYE-8" TO 6" DUCT	EA	15.00			3	UNIT-2BD/2BA	20	(as mentioned in coversheet)
	EQUIPMENT					4	UNIT-2BD/2BA (ACC.)	4	(as mentioned in coversheet)
7	AHU-1 AIR HANDLING UNIT (1.5 TON)	EA	15.00			5	COMMON AREA	2	Bldg 2,3
8	CU-1 CONDENSING UNIT (1.5 TON)	EA	15.00						
9	EXHAUST FAN	EA	15.00						
10	THERMOSTAT	EA	15.00						
	AIR DEVICES								
11	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	60.00						
12	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	15.00						
13	SRG-1 RETURN GRILLE (20x12)	EA	15.00						
	ACCESSORIES								
14	SUPPLY AIR PLENUM (17x12)	EA	15.00						
15	DRYER VENT WITH CAP (4")	EA	15.00						
16	WALL VENT (EXHAUST FAN)	EA	15.00						
	PIPING								
17	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	446.85						
	UNIT-1BD/1BA (ACC.)	3							
	DUCTWORK								
1	7" DIA DUCT	LF	183.09						
2	8" DIA DUCT	LF	69.24						
3	6" DIA DUCT	LF	95.07						
4	4" DIA DUCT	LF	68.49						
5	45° ELBOW (4" to 4")	EA	3.00						
6	45° ELBOW (6" to 6")	EA	3.00						
7	90° ELBOW (6" to 6")	EA	3.00						
8	90° ELBOW (7" to 7")	EA	15.00						
9	90° ELBOW (7" to 8")	EA	3.00						
10	WYE-8" TO 6" DUCT	EA	3.00						
	EQUIPMENT								
11	AHU-1 AIR HANDLING UNIT (1.5 TON)	EA	3.00						
12	CU-1 CONDENSING UNIT (1.5 TON)	EA	3.00						
13	EXHAUST FAN	EA	3.00						
14	THERMOSTAT	EA	3.00						
	AIR DEVICES								
15	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	12.00						
16	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	3.00						
17	SRG-1 RETURN GRILLE (20x12)	EA	3.00						
	ACCESSORIES								

18	SUPPLY AIR PLENUM (17x12)	EA	3.00						
19	DRYER VENT WITH CAP (4")	EA	3.00						
20	WALL VENT (EXHAUST FAN)	EA	3.00						
	PIPING								
20	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	88.29						
	UNIT-2BD/2BA	30							
	DUCTWORK								
1	7" DIA DUCT	LF	2,865.60						
2	8" DIA DUCT	LF	767.70						
3	6" DIA DUCT	LF	731.40						
4	4" DIA DUCT	LF	401.40						
5	45° ELBOW (6" to 6")	EA	30.00						
6	90° ELBOW (6" to 6")	EA	30.00						
7	90° ELBOW (7" to 7")	EA	240.00						
8	90° ELBOW (7" to 8")	EA	30.00						
9	90° ELBOW (8" to 8")	EA	30.00						
10	WYE-8" TO 6" DUCT	EA	30.00						
	EQUIPMENT								
11	AHU-2 AIR HANDLING UNIT (2 TON)	EA	30.00						
12	CU-2 CONDENSING UNIT (2 TON)	EA	30.00						
13	THERMOSTAT	EA	30.00						
14	EXHAUST FAN	EA	60.00						
	AIR DEVICES								
15	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	150.00						
16	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	60.00						
17	SRG-2 RETURN GRILLE (24x12)	EA	30.00						
	ACCESSORIES								
18	SUPPLY AIR PLENUM (17x12)	EA	30.00						
19	DRYER VENT WITH CAP (4")	EA	30.00						
20	WALL VENT (EXHAUST FAN)	EA	60.00						
	PIPING								
21	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	516.30						
	UNIT-2BD/2BA (ACC.)	6							
	DUCTWORK								
1	7" DIA DUCT	LF	643.08						
2	8" DIA DUCT	LF	147.90						
3	6" DIA DUCT	LF	125.04						
4	4" DIA DUCT	LF	82.86						
5	45° ELBOW (6" to 6")	EA	6.00						
6	90° ELBOW (6" to 6")	EA	12.00						
7	90° ELBOW (7" to 7")	EA	42.00						
8	WYE-8" TO 6" DUCT	EA	6.00						
	EQUIPMENT								
8	AHU-2 AIR HANDLING UNIT (2 TON)	EA	6.00						
9	CU-2 CONDENSING UNIT (2 TON)	EA	6.00						
10	THERMOSTAT	EA	6.00						
11	EXHAUST FAN	EA	12.00						
	AIR DEVICES								
12	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	30.00						

13	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	12.00						
14	SRG-2 RETURN GRILLE (24x12)	EA	6.00						
	ACCESSORIES								
15	SUPPLY AIR PLENUM (17x12)	EA	6.00						
16	DRYER VENT WITH CAP (4")	EA	6.00						
17	WALL VENT (EXHAUST FAN)	EA	12.00						
	PIPING								
18	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	81.78						
	Common Area	3							
	EQUIPMENT								
1	IRH-1 FOSTORIA 222-A3-1/GS 3.2KW	EA	3.00						
	TYPE-2								
	UNIT-1BD/1BA	10							
	DUCTWORK								
1	7" DIA DUCT	LF	628.90						
2	8" DIA DUCT	LF	231.00						
3	6" DIA DUCT	LF	303.80						
4	45° ELBOW (6" to 6")	EA	10.00						
5	90° ELBOW (6" to 6")	EA	10.00						
6	90° ELBOW (7" to 7")	EA	50.00						
7	90° ELBOW (7" to 8")	EA	10.00						
8	WYE-8" TO 6" DUCT	EA	10.00						
	EQUIPMENT								
7	AHU-1 AIR HANDLING UNIT (1.5 TON)	EA	10.00						
8	CU-1 CONDENSING UNIT (1.5 TON)	EA	10.00						
9	EXHAUST FAN	EA	10.00						
10	THERMOSTAT	EA	10.00						
	AIR DEVICES								
11	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	40.00						
12	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	10.00						
13	SRG-1 RETURN GRILLE (20x12)	EA	10.00						
	ACCESSORIES								
14	SUPPLY AIR PLENUM (17x12)	EA	10.00						
15	DRYER VENT WITH CAP (4")	EA	10.00						
16	WALL VENT (EXHAUST FAN)	EA	10.00						
	PIPING								
17	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	297.90						
	UNIT-1BD/1BA (ACC.)	2							
	DUCTWORK								
1	7" DIA DUCT	LF	122.06						
2	8" DIA DUCT	LF	46.16						
3	6" DIA DUCT	LF	63.38						
4	4" DIA DUCT	LF	45.66						
5	45° ELBOW (4" to 4")	EA	2.00						
6	45° ELBOW (6" to 6")	EA	2.00						
7	90° ELBOW (6" to 6")	EA	2.00						
8	90° ELBOW (7" to 7")	EA	10.00						
9	90° ELBOW (7" to 8")	EA	2.00						
10	WYE-8" TO 6" DUCT	EA	2.00						
	EQUIPMENT								

11	AHU-1 AIR HANDLING UNIT (1.5 TON)	EA	2.00						
12	CU-1 CONDENSING UNIT (1.5 TON)	EA	2.00						
13	EXHAUST FAN	EA	2.00						
14	THERMOSTAT	EA	2.00						
	AIR DEVICES								
15	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	8.00						
16	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	2.00						
17	SRG-1 RETURN GRILLE (20x12)	EA	2.00						
	ACCESSORIES								
18	SUPPLY AIR PLENUM (17x12)	EA	2.00						
19	DRYER VENT WITH CAP (4")	EA	2.00						
20	WALL VENT (EXHAUST FAN)	EA	2.00						
	PIPING								
21	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	58.86						
	UNIT-2BD/2BA	20							
	DUCTWORK								
1	7" DIA DUCT	LF	1,910.40						
2	8" DIA DUCT	LF	511.80						
3	6" DIA DUCT	LF	487.60						
4	4" DIA DUCT	LF	267.60						
5	45° ELBOW (6" to 6")	EA	20.00						
6	90° ELBOW (6" to 6")	EA	20.00						
7	90° ELBOW (7" to 7")	EA	160.00						
8	90° ELBOW (7" to 8")	EA	20.00						
9	90° ELBOW (8" to 8")	EA	20.00						
10	WYE-8" TO 6" DUCT	EA	20.00						
	EQUIPMENT								
11	AHU-2 AIR HANDLING UNIT (2 TON)	EA	20.00						
12	CU-2 CONDENSING UNIT (2 TON)	EA	20.00						
13	THERMOSTAT	EA	20.00						
14	EXHAUST FAN	EA	40.00						
	AIR DEVICES								
15	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	100.00						
16	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	40.00						
17	SRG-2 RETURN GRILLE (24x12)	EA	20.00						
	ACCESSORIES								
18	SUPPLY AIR PLENUM (17x12)	EA	20.00						
19	DRYER VENT WITH CAP (4")	EA	20.00						
20	WALL VENT (EXHAUST FAN)	EA	40.00						
	PIPING								
21	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	344.20						
	UNIT-2BD/2BA (ACC.)	4							
	DUCTWORK								
1	7" DIA DUCT	LF	428.72						
2	8" DIA DUCT	LF	98.60						
3	6" DIA DUCT	LF	83.36						
4	4" DIA DUCT	LF	55.24						
5	45° ELBOW (6" to 6")	EA	4.00						
6	90° ELBOW (6" to 6")	EA	8.00						
7	90° ELBOW (7" to 7")	EA	28.00						
8	WYE-8" TO 6" DUCT	EA	4.00						

	EQUIPMENT									
8	AHU-2 AIR HANDLING UNIT (2 TON)	EA	4.00							
9	CU-2 CONDENSING UNIT (2 TON)	EA	4.00							
10	THERMOSTAT	EA	4.00							
11	EXHAUST FAN	EA	8.00							
	AIR DEVICES									
12	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	20.00							
13	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	8.00							
14	SRG-2 RETURN GRILLE (24x12)	EA	4.00							
	ACCESSORIES									
15	SUPPLY AIR PLENUM (17x12)	EA	4.00							
16	DRYER VENT WITH CAP (4")	EA	4.00							
17	WALL VENT (EXHAUST FAN)	EA	8.00							
	PIPING									
18	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	54.52							
	Common Area		2							
	EQUIPMENT									
1	IRH-1 FOSTORIA 222-A3-1/GS 3.2KW	EA	2.00							

S. No.	Item Description	Unit	Qty		
	UNIT-1BD/1BA				
	DUCTWORK				
1	7" DIA DUCT	LF	62.89		
2	8" DIA DUCT	LF	23.10		
3	6" DIA DUCT	LF	30.38		
4	45° ELBOW (6" to 6")	EA	1.00		
5	90° ELBOW (6" to 6")	EA	1.00		
6	90° ELBOW (7" to 7")	EA	5.00		
7	90° ELBOW (7" to 8")	EA	1.00		
8	WYE-8" TO 6" DUCT	EA	1.00		
	EQUIPMENT				
7	AHU-1 AIR HANDLING UNIT (1.5 TON)	EA	1.00		
8	CU-1 CONDENSING UNIT (1.5 TON)	EA	1.00		
9	EXHAUST FAN	EA	1.00		
10	THERMOSTAT	EA	1.00		
	AIR DEVICES				
11	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	4.00		
12	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	1.00		
13	SRG-1 RETURN GRILLE (20x12)	EA	1.00		
	ACCESSORIES				
14	SUPPLY AIR PLENUM (17x12)	EA	1.00		
15	DRYER VENT WITH CAP (4")	EA	1.00		
16	WALL VENT (EXHAUST FAN)	EA	1.00		
	PIPING				
17	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	29.79		
	UNIT-1BD/1BA (ACC.)				
	DUCTWORK				
1	7" DIA DUCT	LF	61.03		
2	8" DIA DUCT	LF	23.08		
3	6" DIA DUCT	LF	31.69		
4	4" DIA DUCT	LF	22.83		
5	45° ELBOW (4" to 4")	EA	1.00		
6	45° ELBOW (6" to 6")	EA	1.00		
7	90° ELBOW (6" to 6")	EA	1.00		
8	90° ELBOW (7" to 7")	EA	5.00		
9	90° ELBOW (7" to 8")	EA	1.00		
10	WYE-8" TO 6" DUCT	EA	1.00		
	EQUIPMENT				
11	AHU-1 AIR HANDLING UNIT (1.5 TON)	EA	1.00		
12	CU-1 CONDENSING UNIT (1.5 TON)	EA	1.00		
13	EXHAUST FAN	EA	1.00		
14	THERMOSTAT	EA	1.00		
	AIR DEVICES				
15	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	4.00		
16	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	1.00		
17	SRG-1 RETURN GRILLE (20x12)	EA	1.00		
	ACCESSORIES				

18	SUPPLY AIR PLENUM (17x12)	EA	1.00		
19	DRYER VENT WITH CAP (4")	EA	1.00		
20	WALL VENT (EXHAUST FAN)	EA	1.00		
	PIPING				
21	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	29.43		
	UNIT-2BD/2BA				
	DUCTWORK				
1	7" DIA DUCT	LF	95.52		
2	8" DIA DUCT	LF	25.59		
3	6" DIA DUCT	LF	24.38		
4	4" DIA DUCT	LF	13.38		
5	45° ELBOW (6" to 6")	EA	1.00		
6	90° ELBOW (6" to 6")	EA	1.00		
7	90° ELBOW (7" to 7")	EA	8.00		
8	90° ELBOW (7" to 8")	EA	1.00		
9	90° ELBOW (8" to 8")	EA	1.00		
10	WYE-8" TO 6" DUCT	EA	1.00		
	EQUIPMENT				
11	AHU-2 AIR HANDLING UNIT (2 TON)	EA	1.00		
12	CU-2 CONDENSING UNIT (2 TON)	EA	1.00		
13	THERMOSTAT	EA	1.00		
	AIR DEVICES				
14	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	5.00		
15	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	2.00		
16	SRG-2 RETURN GRILLE (24x12)	EA	1.00		
17	EXHAUST FAN	EA	2.00		
	ACCESSORIES				
18	SUPPLY AIR PLENUM (17x12)	EA	1.00		
19	DRYER VENT WITH CAP (4")	EA	1.00		
20	WALL VENT (EXHAUST FAN)	EA	2.00		
	PIPING				
21	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	17.21		
	UNIT-2BD/2BA (ACC.)				
	DUCTWORK				
1	7" DIA DUCT	LF	107.18		
2	8" DIA DUCT	LF	24.65		
3	6" DIA DUCT	LF	20.84		
4	4" DIA DUCT	LF	13.81		
5	45° ELBOW (6" to 6")	EA	1.00		
6	90° ELBOW (6" to 6")	EA	2.00		
7	90° ELBOW (7" to 7")	EA	7.00		
8	WYE-8" TO 6" DUCT	EA	1.00		
	EQUIPMENT				
8	AHU-2 AIR HANDLING UNIT (2 TON)	EA	1.00		
9	CU-2 CONDENSING UNIT (2 TON)	EA	1.00		
10	THERMOSTAT	EA	1.00		
	AIR DEVICES				
11	CR-2 CEILING SUPPLY REGISTER (12x4)	EA	5.00		
12	CR-1 CEILING SUPPLY REGISTER (10x4)	EA	2.00		
13	SRG-2 RETURN GRILLE (24x12)	EA	1.00		
14	EXHAUST FAN	EA	2.00		

		ACCESSORIES				
	15	SUPPLY AIR PLENUM (17x12)	EA	1.00		
	16	DRYER VENT WITH CAP (4")	EA	1.00		
	17	WALL VENT (EXHAUST FAN)	EA	2.00		
		PIPING				
	18	R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insulation	LF	13.63		
		Common Area				
		EQUIPMENT				
	1	IRH-1 FOSTORIA 222-A3-1/GS 3.2KW	EA	1.00		

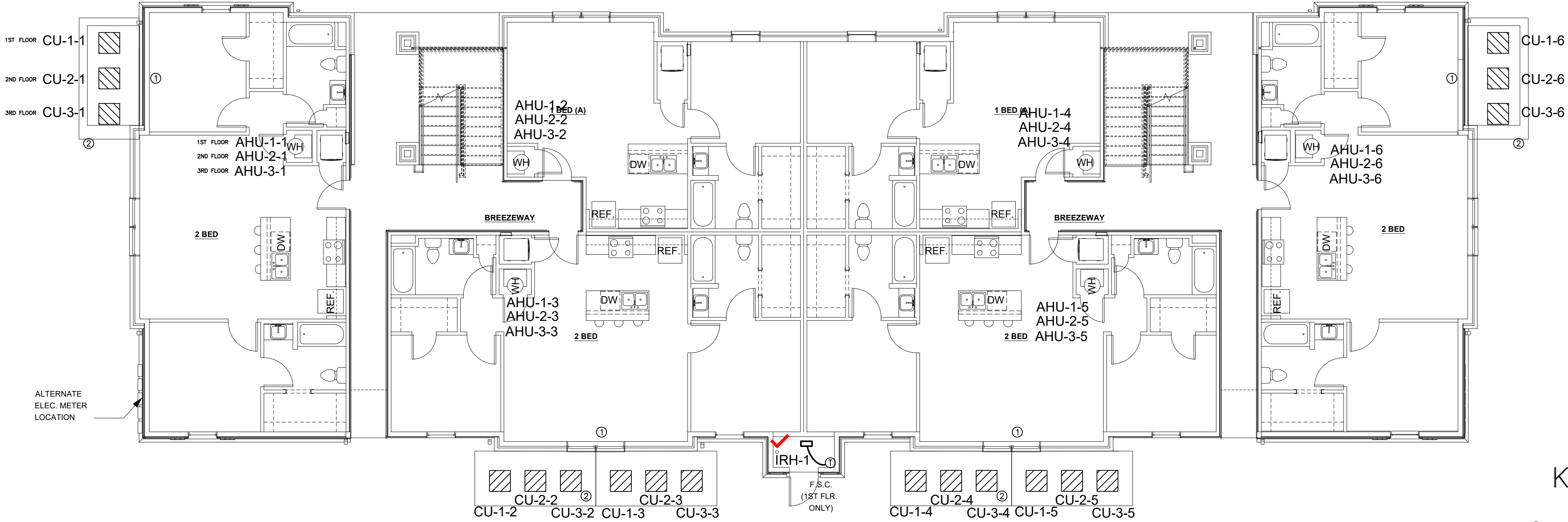
SRG1- 20x12 FACE, 22x14 FRAME	Unit 1BD-1BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
AHU-1 DAIKIN ARUF18B14 - 1.5Ton	Unit 1BD-1BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
4" DIA DUCT	Unit 1BD-1BA (ACC.)	GND FLOOR MECH PLAN	LF	22.83
45° ELBOW (6" to 6")	Unit 1BD-1BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
45° ELBOW (4" to 4")	Unit 1BD-1BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
THERMOSTAT MOUNT AT 48" AFF	Unit 1BD-1BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insu	Unit 1BD-1BA (ACC.)	GND FLOOR MECH PLAN	LF	29.43
7" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	12.19
8" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	25.59
7" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	28.27
7" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	20.10
7" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	21.83
6" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	5.74
7" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	13.13
45° ELBOW (6" to 6")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 8")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (8" to 8")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (6" to 6")	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
6" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	5.24
WYE-8" TO 6" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
CR-2 Ceiling Supply - Metal Fab MFSCR - 12x4	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	5.00
CR-1 Ceiling Supply Metal Fab MFSCR - 10x4	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	2.00
CU-2 CONDENSING UNIT , DAIKIN DX14SN0241 - 2 TON	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
4" dryer vent to dryer vent cap.	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
FAN MANUFACTURER'S WALL VENT	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	2.00
SRG2 - METAL FAB MFRG 24x12 FACE AND 22x 14 FRAME	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
EF-1 , EXHAUST FAN	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	2.00
6" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	5.94
6" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	7.46
4" DIA DUCT	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	13.38
THERMOSTAT MOUNT AT 48" AFF	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
AHU-2 DAIKIN ARUF24B14 2 Ton	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
17x12 SA PLENUM ON TOP OF AHU	Unit 2BD-2BA	GND FLOOR MECH PLAN	Each	1.00
R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insu	Unit 2BD-2BA	GND FLOOR MECH PLAN	LF	17.21
6" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	8.51
7" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	4.37
WYE-8" TO 6" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
8" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	24.65
7" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	32.53
7" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	23.57
7" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	11.37
7" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	20.94
6" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	6.19

0	1
0	1
22.83	0
0	1
0	1
0	1
29.43	0
12.19	0
25.59	0
28.27	0
20.1	0
21.83	0
5.74	0
13.13	0
0	1
0	1
0	1
0	1
0	1
0	1
0	1
0	1
0	1
0	1
0	1
5.24	0
0	1
0	5
0	2
0	1
0	1
0	2
5.94	0
7.46	0
13.38	0
0	1
0	1
0	1
17.21	0
8.51	0
4.37	0
0	1
24.65	0
32.53	0
23.57	0
11.37	0
20.94	0
6.19	0

90° ELBOW (7" to 7")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (7" to 7")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (6" to 6")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
90° ELBOW (6" to 6")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
45° ELBOW (6" to 6")	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
CR-2 Ceiling Supply - Metal Fab MFSCR - 12x4	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	5.00
CR-1 Ceiling Supply Metal Fab MFSCR - 10x4	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	2.00
EF-1 , EXHAUST FAN	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
EF-1 , EXHAUST FAN	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
AHU-2 DAIKIN ARUF24B14 2 Ton	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
7" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	7.78
7" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	6.62
CU-2 CONDENSING UNIT , DAIKIN DX14SN0241 - 2 TON	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
FAN MANUFACTURER'S WALL VENT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
FAN MANUFACTURER'S WALL VENT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
SRG2 - METAL FAB MFRG 24x12 FACE AND 22x 14 FRAME	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
4" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	13.81
6" DIA DUCT	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	6.14
4" dryer vent to dryer vent cap.	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
THERMOSTAT MOUNT AT 48" AFF	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
17x12 SA PLENUM ON TOP OF AHU	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	Each	1.00
R410A Copper Refrigerant Lineset with 1/2" Elastomeric Insu	Unit 2BD-2BA (ACC.)	GND FLOOR MECH PLAN	LF	13.63
IRH-1 FOSTORIA 222-A3-1/GS 3.2KW	Common Area	M1.0a	Each	1.00

0	1
0	1
0	1
0	1
0	1
0	1
0	1
0	1
0	1
0	1
0	5
0	2
0	1
0	1
0	1
7.78	0
6.62	0
0	1
0	1
0	1
0	1
13.81	0
6.14	0
0	1
0	1
0	1
13.63	0
0	1

	Description	Quantity	Unit
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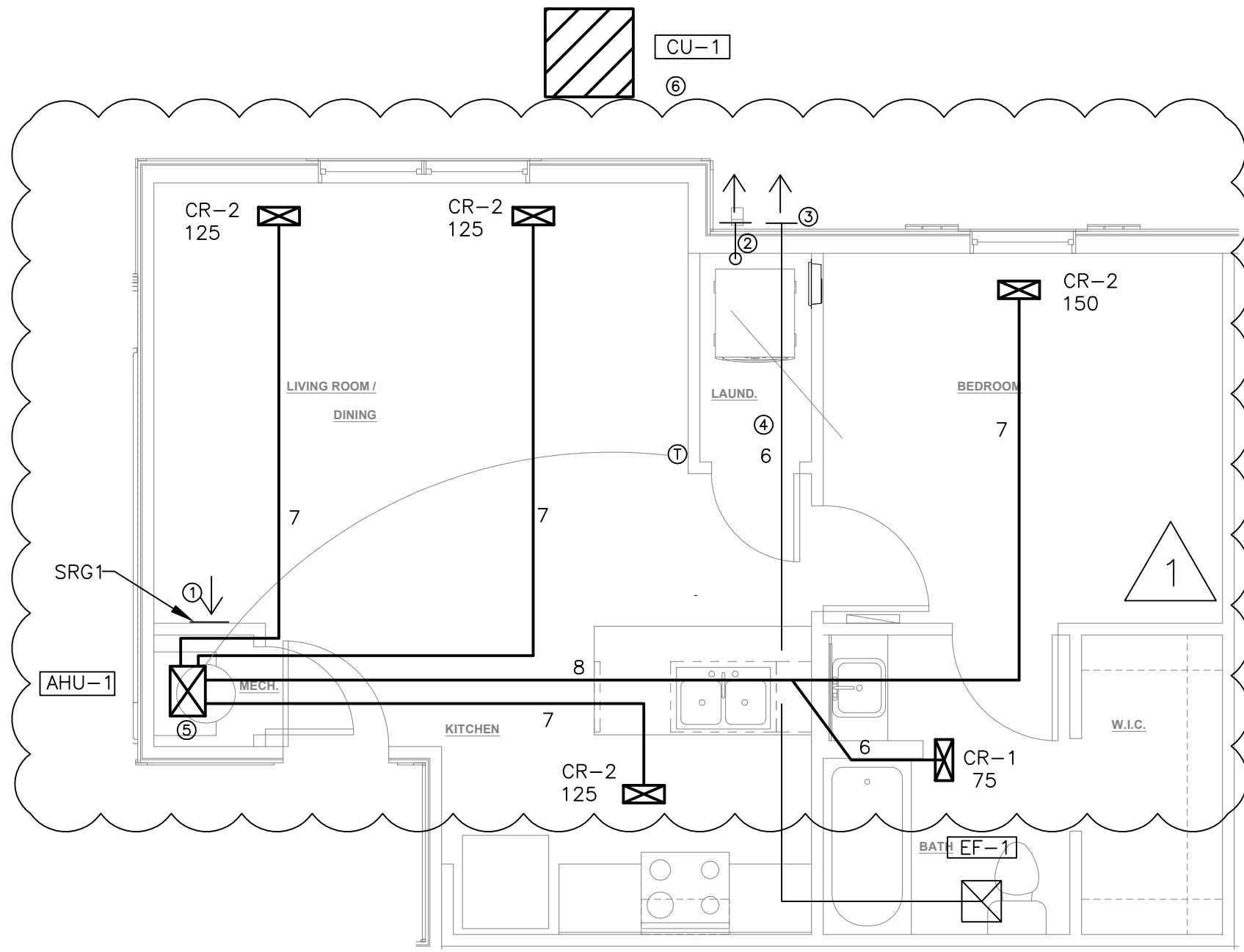


A OVERALL BUILDING TYPE I & II MECHANICAL PLAN
 Scale: 1/8" = 1'-0"

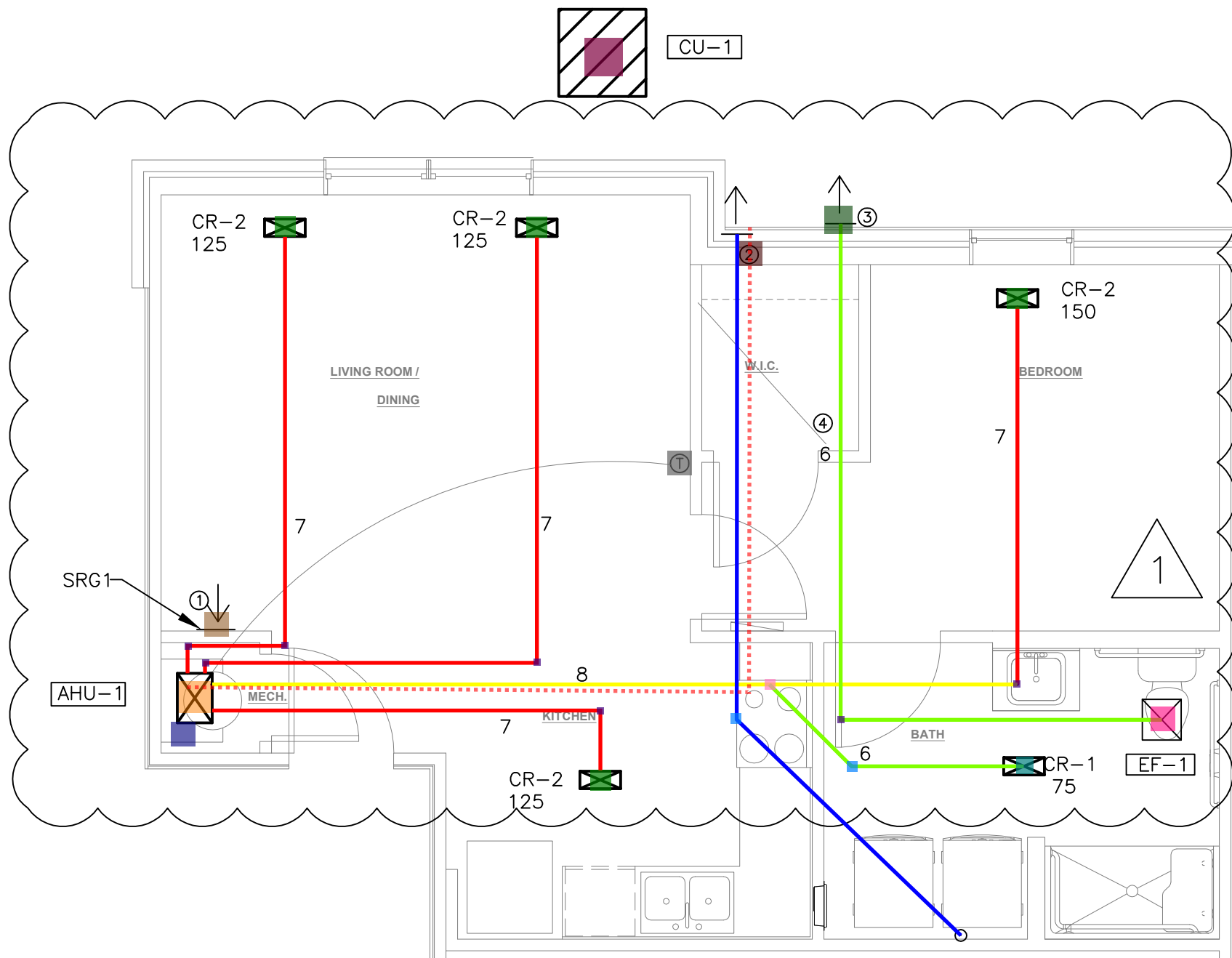
KEYED NOTES

- ① ROUTE REFRIGERANT PIPING IN WALLS. PROTECT FROM DAMAGE BY OTHER TRADES. TURN UP IN BACK OF MECH ROOM AND ROUTE UP THRU MECH ROOMS TO UPPER FLOORS.
- ② 4" CONCRETE PAD. PROVIDE MFGR'S SERVICE CLEARANCE REQUIREMENTS AND COORDINATE PAD DIMENSIONS WITH GC AND OTHER TRADES.

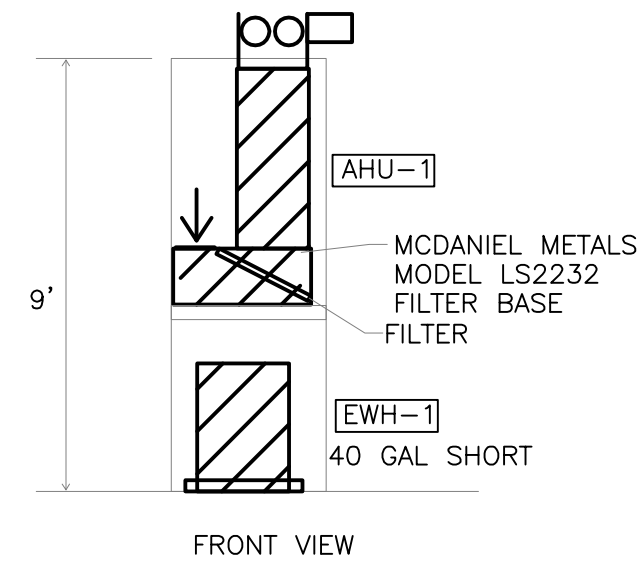
Description	Quantity	Unit
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A UNIT – 1BD/1BA
Scale: 1/4" = 1'-0"



B UNIT – 1BD/1BA (ACC.)
Scale: 1/4" = 1'-0"

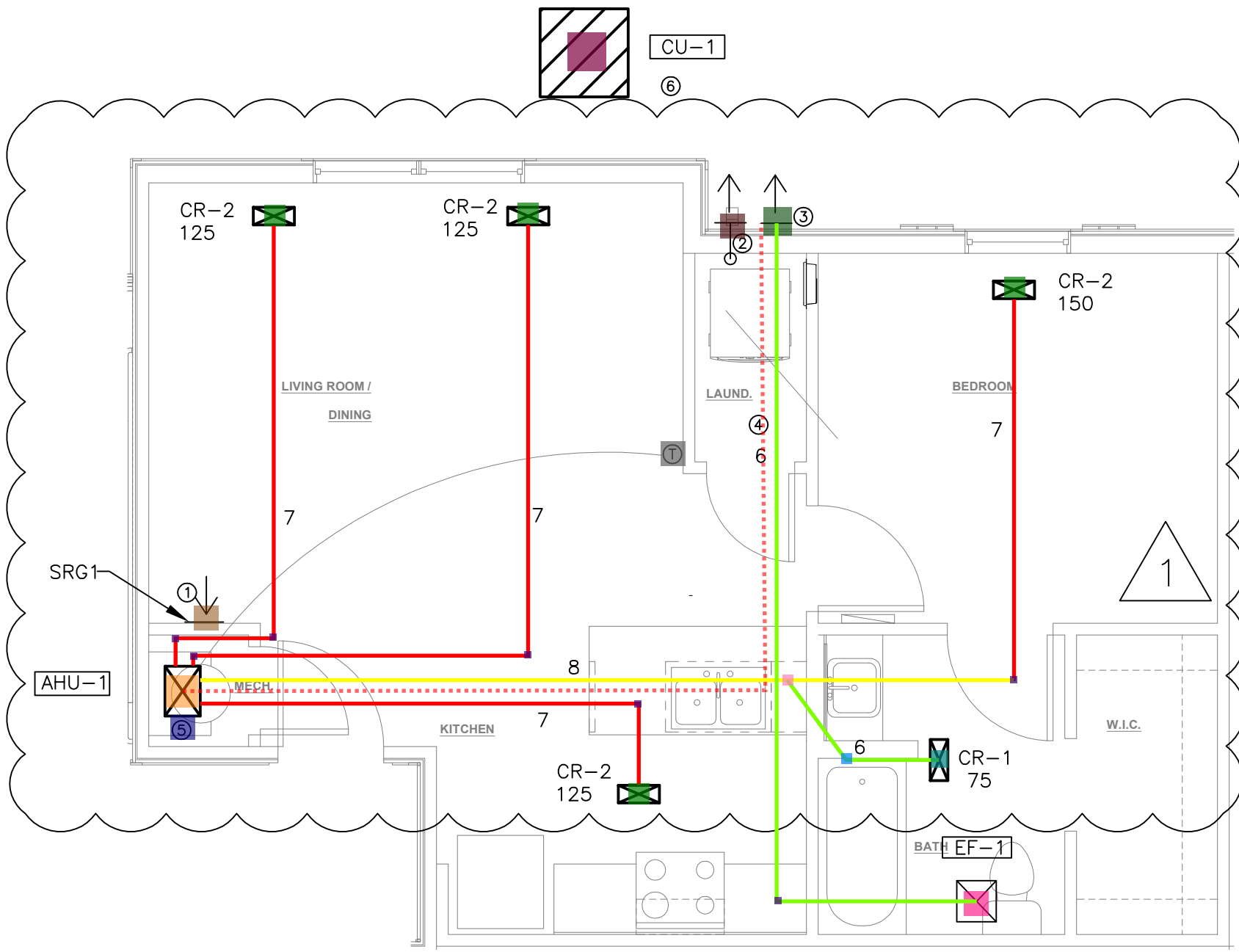


C AHU/EPH CLOSET DETAIL
Scale: 1/4" = 1'-0"

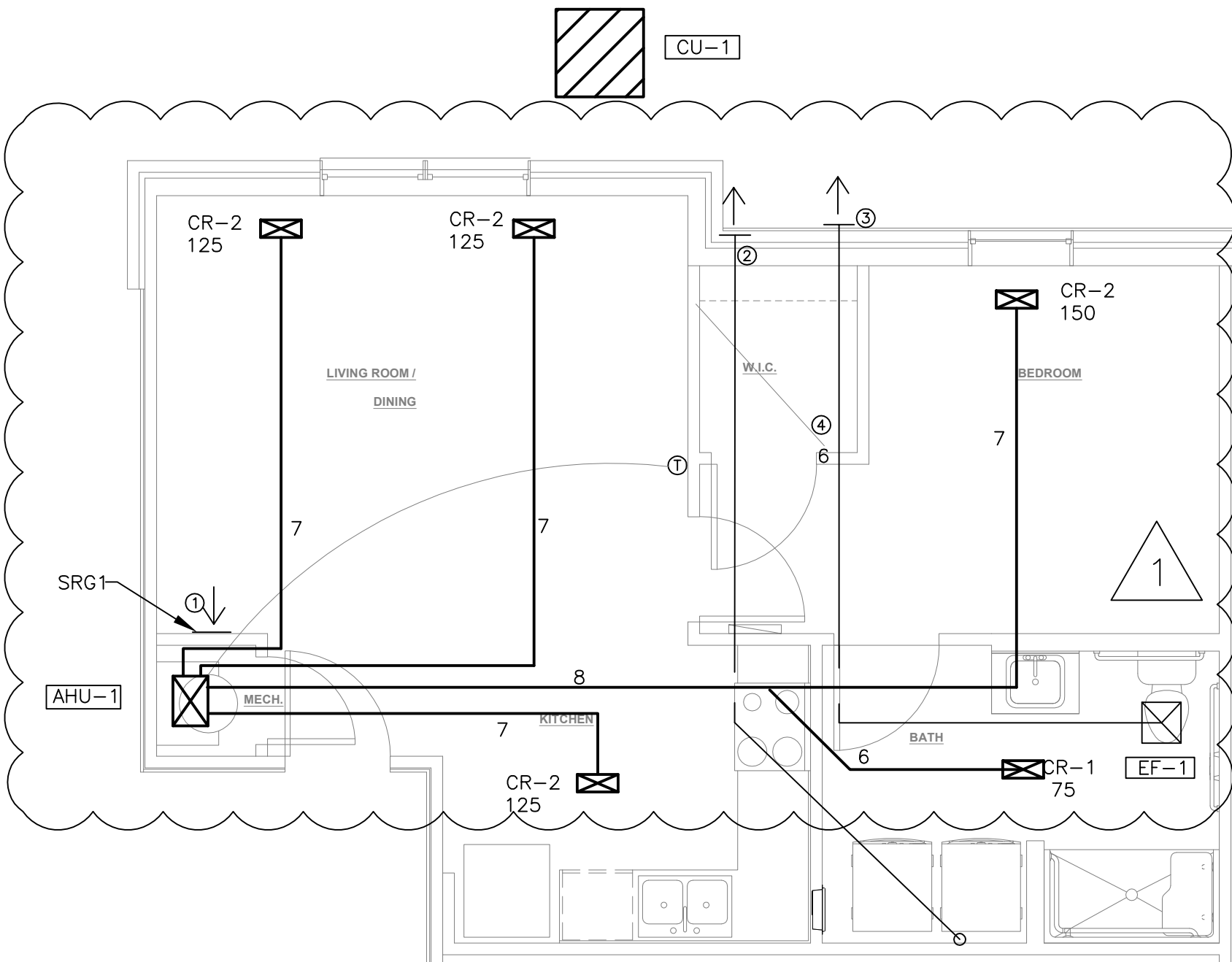
KEYED NOTES

- ① WALL MOUNTED RETURN GRILL. PROVIDE TYPE-X GYP BOARD AT INSIDE WALLS OF CLOSET. SEAL OFF ALL COMBUSTIBLE MATERIALS FROM PLENUM SPACE.
- ② 4 INCH DRYER VENT TO DRYER VENT CAP.
- ③ FAN MANUFACTURER'S WALL VENT.
- ④ ROUTE EXHAUST DUCTS IN SOFFIT OR ABOVE DROP CEILING. PROVIDE CODE REQUIRED SEPARATION TO OPERABLE WINDOWS.
- ⑤ 17x12 SA PLENUM ON TOP OF AHU.
- ⑥ SEE OVERALL MECH PLAN FOR LOCATION OF ALL CONDENSING UNITS.

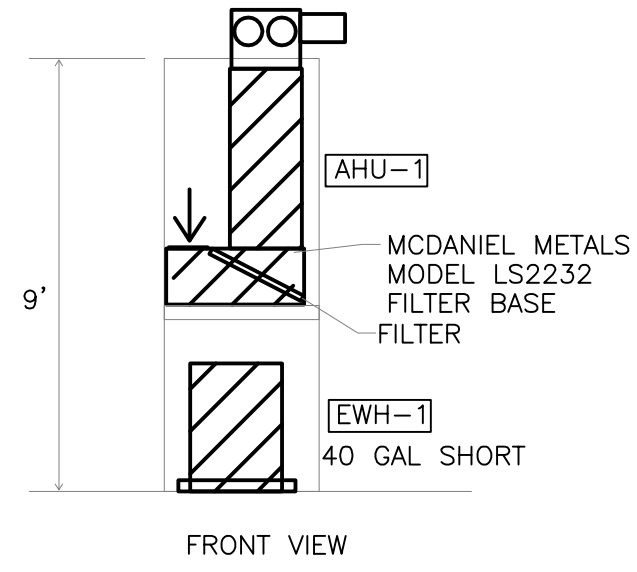
Description	Quantity	Unit
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A UNIT – 1BD/1BA
Scale: 1/4" = 1'-0"



B UNIT – 1BD/1BA (ACC.)
Scale: 1/4" = 1'-0"

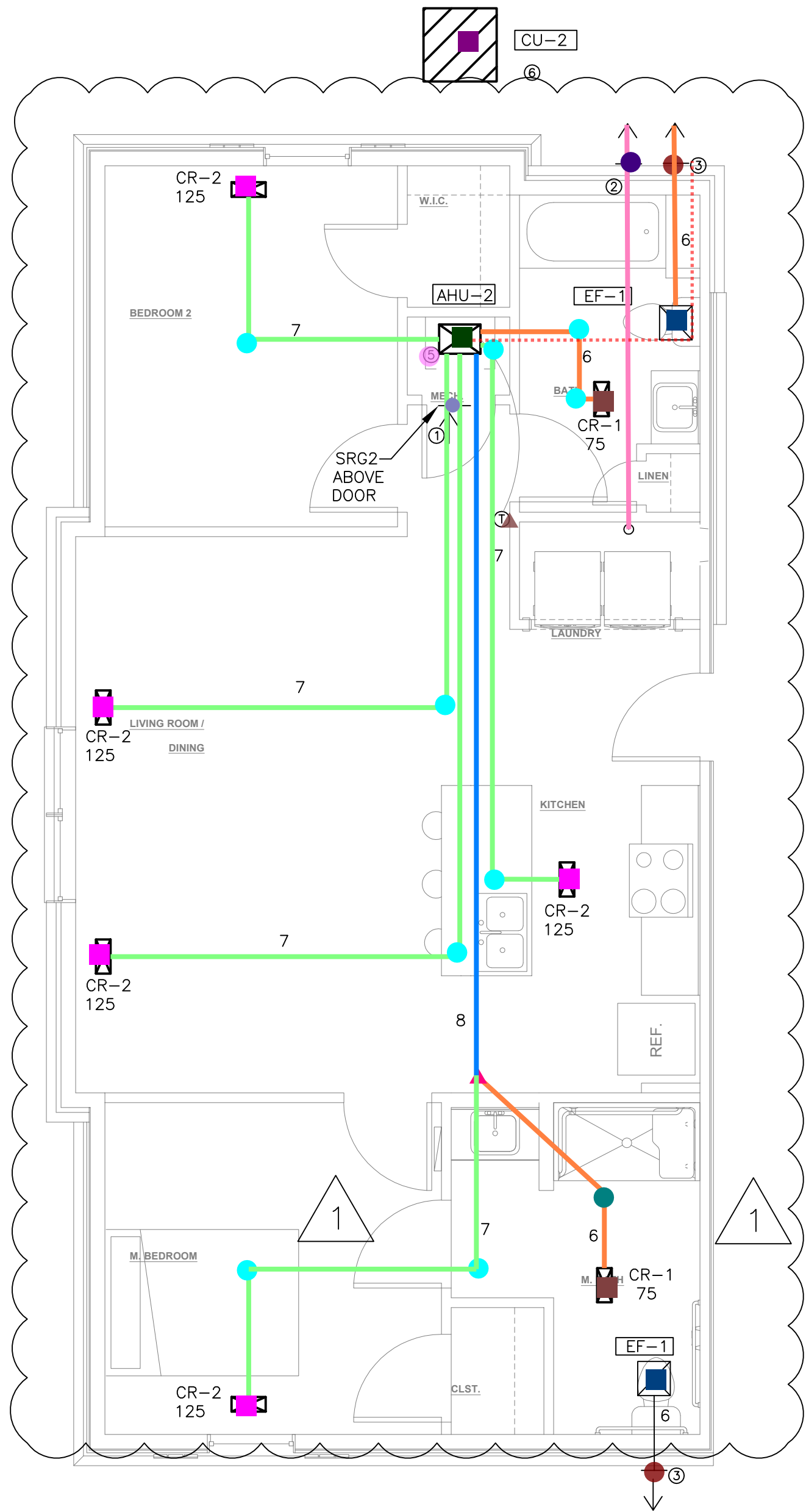


C AHU/EWH CLOSET DETAIL
Scale: 1/4" = 1'-0"

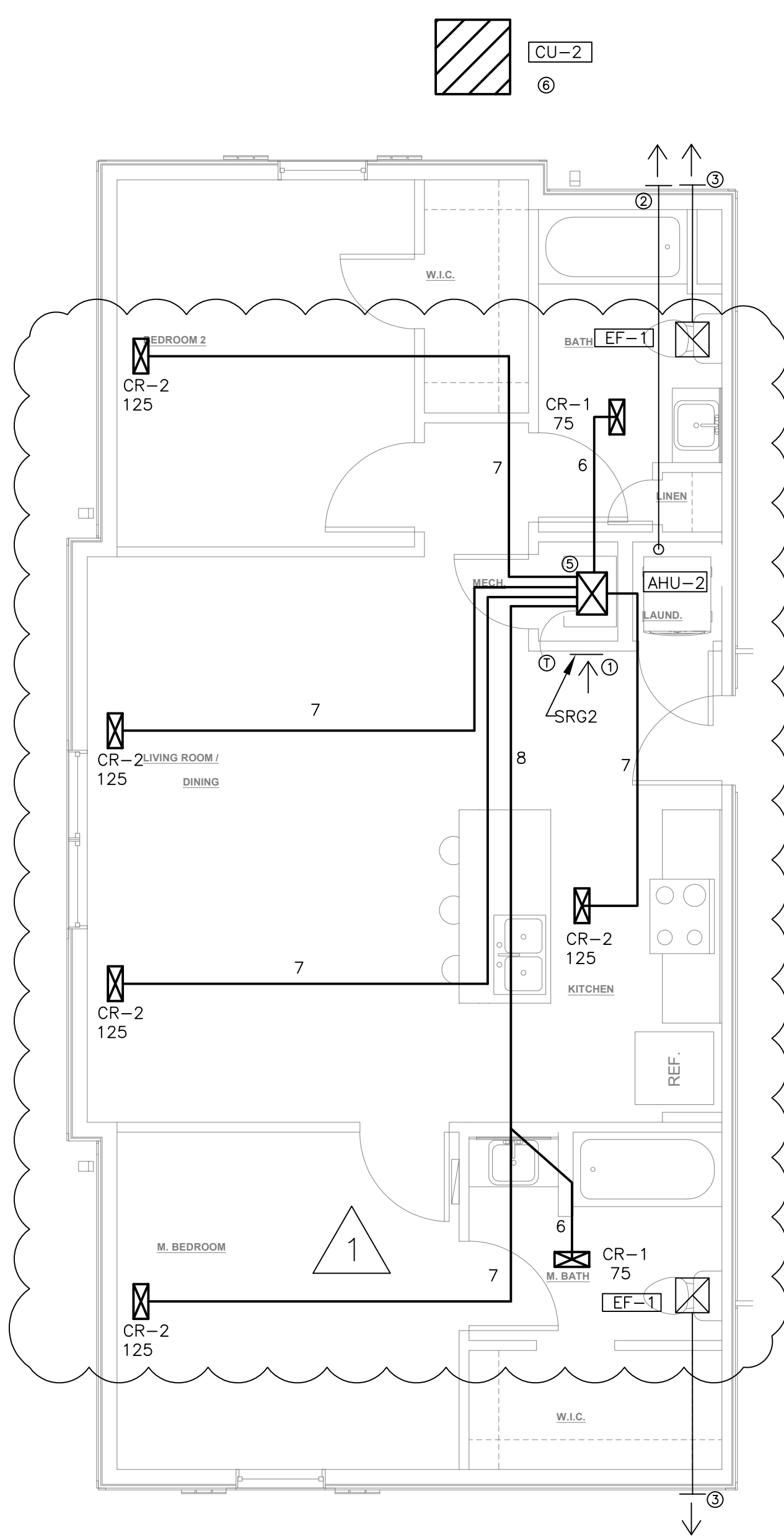
KEYED NOTES

- ① WALL MOUNTED RETURN GRILL. PROVIDE TYPE-X GYP BOARD AT INSIDE WALLS OF CLOSET. SEAL OFF ALL COMBUSTIBLE MATERIALS FROM PLENUM SPACE.
- ② 4 INCH DRYER VENT TO DRYER VENT CAP.
- ③ FAN MANUFACTURER'S WALL VENT.
- ④ ROUTE EXHAUST DUCTS IN SOFFIT OR ABOVE DROP CEILING. PROVIDE CODE REQUIRED SEPARATION TO OPERABLE WINDOWS.
- ⑤ 17x12 SA PLENUM ON TOP OF AHU.
- ⑥ SEE OVERALL MECH PLAN FOR LOCATION OF ALL CONDENSING UNITS.

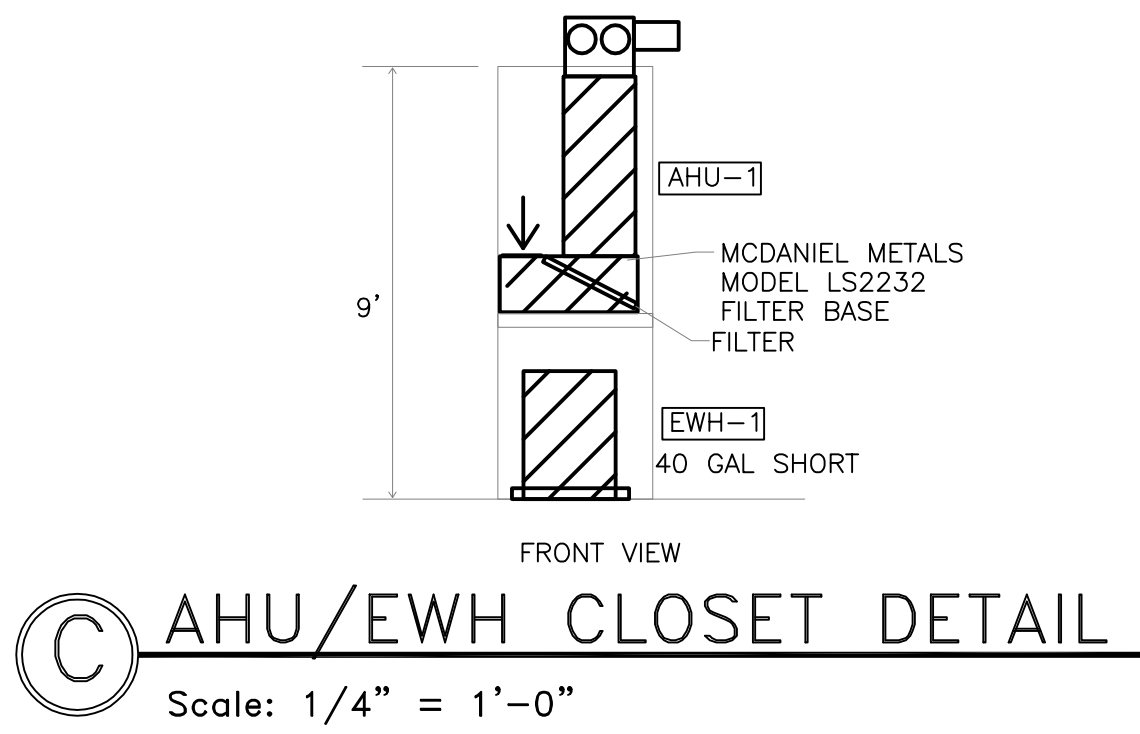
Description	Quantity	Unit
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B UNIT — 2BD/2BA (ACC.)
Scale: 1/4" = 1'-0"



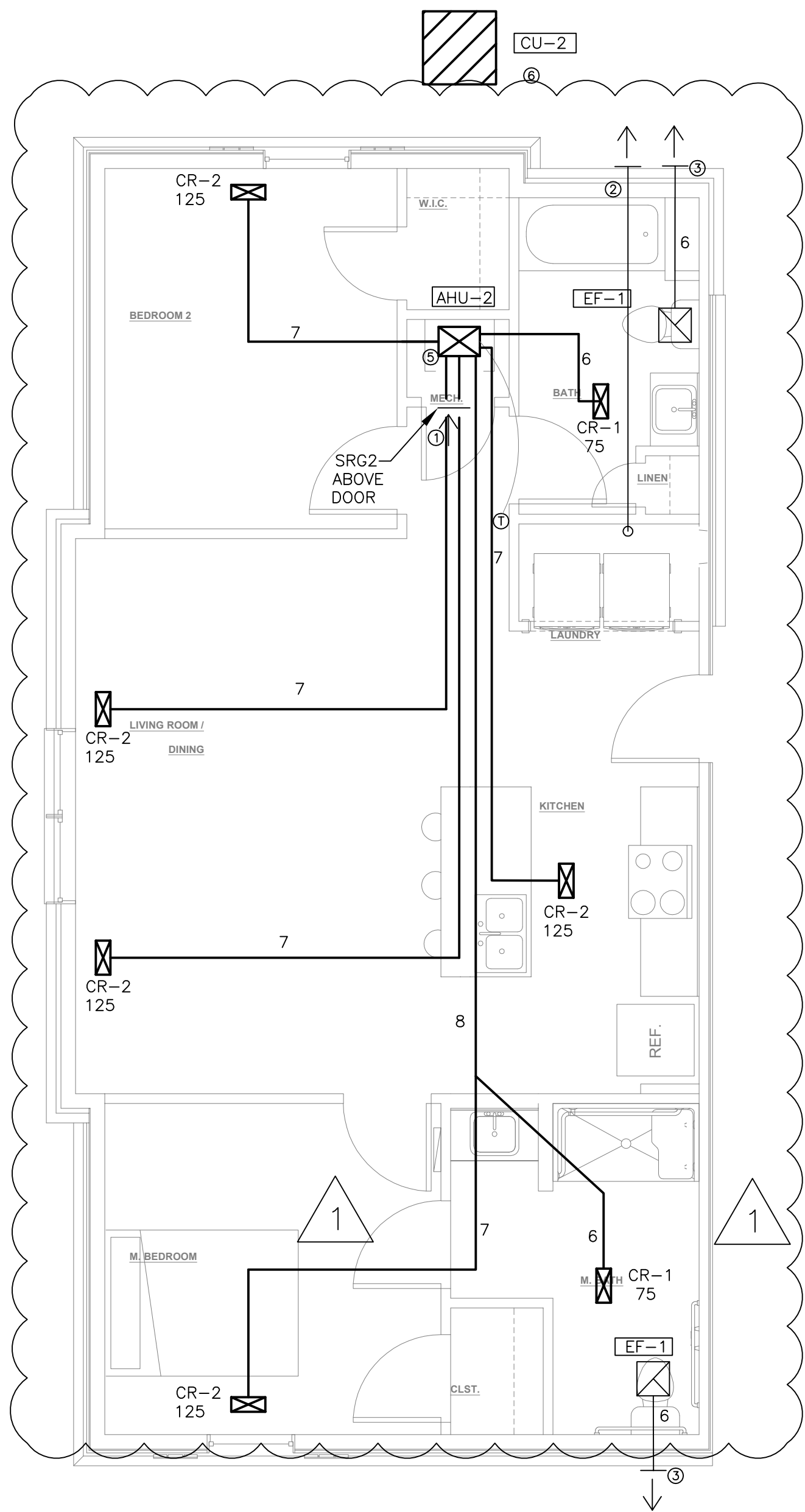
A UNIT — 2BD/2BA
Scale: 1/4" = 1'-0"



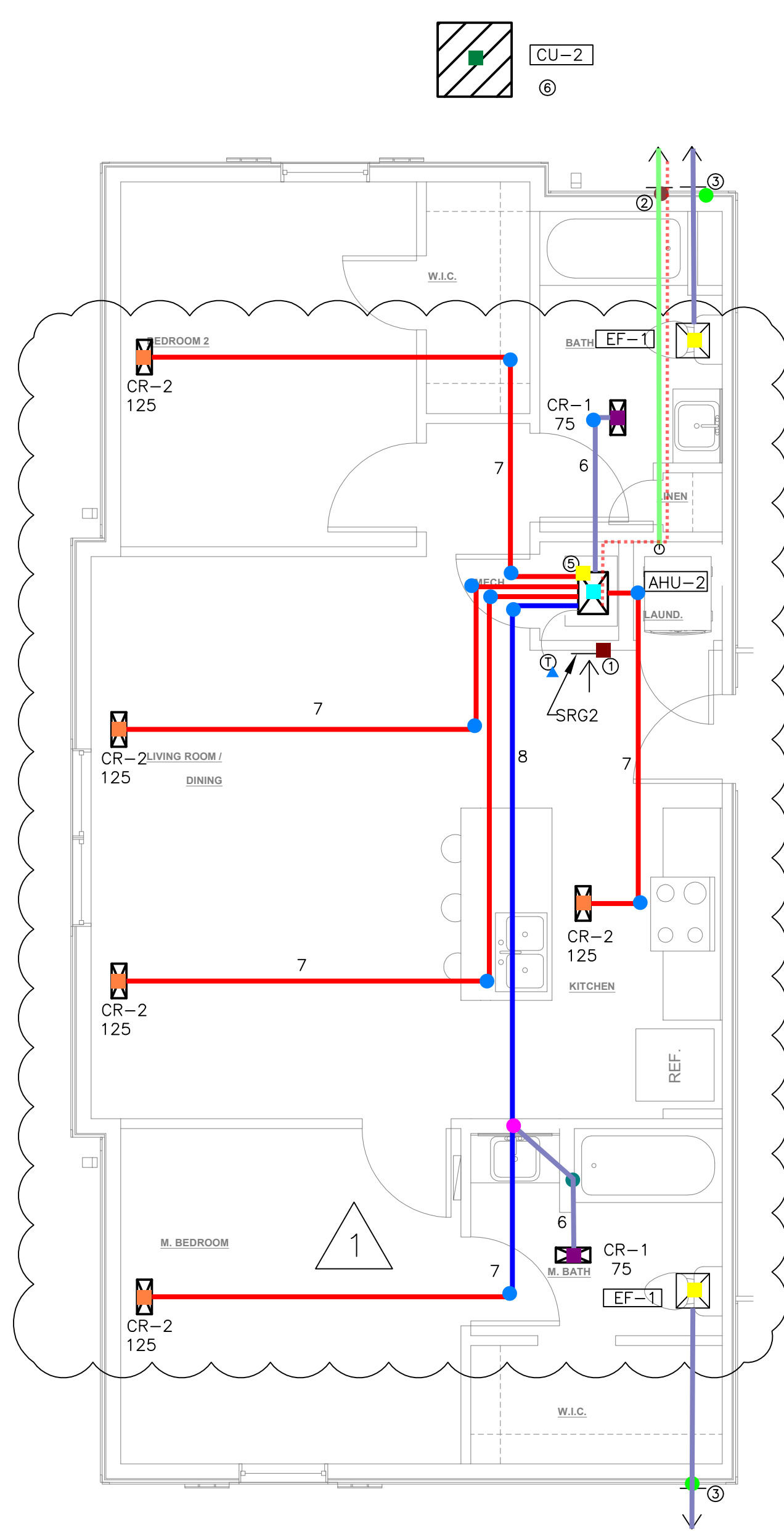
KEYED NOTES

- ① WALL MOUNTED RETURN GRILL. PROVIDE TYPE-X GYP BOARD AT INSIDE WALLS OF CLOSET. SEAL OFF ALL COMBUSTIBLE MATERIALS FROM PLENUM SPACE.
- ② 4 INCH DRYER VENT TO DRYER VENT CAP.
- ③ FAN MANUFACTURER'S WALL VENT.
- ④ ROUTE EXHAUST DUCTS IN SOFFIT OR ABOVE DROP CEILING. PROVIDE CODE REQUIRED SEPARATION TO OPERABLE WINDOWS.
- ⑤ 17x12 SA PLENUM ON TOP OF AHU.
- ⑥ SEE OVERALL MECH PLAN FOR LOCATION OF ALL CONDENSING UNITS.

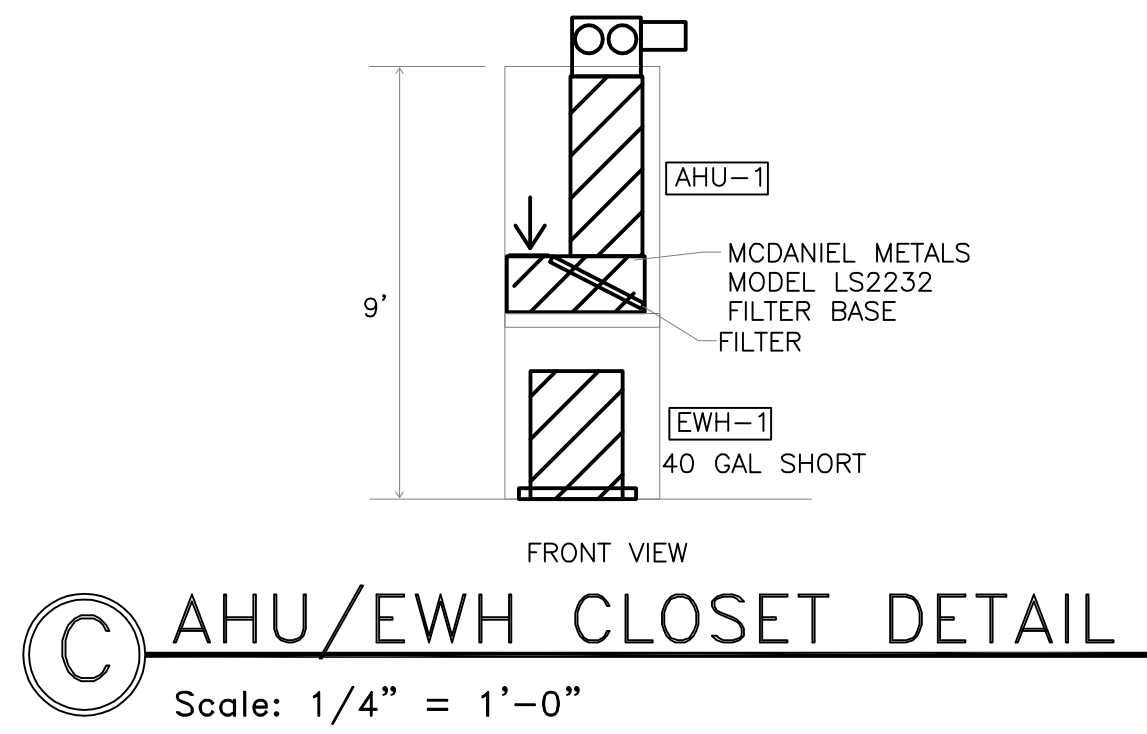
	Description	Quantity	Unit
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B UNIT - 2BD/2BA (ACC.)
Scale: 1/4" = 1'-0"



A UNIT - 2BD/2BA
Scale: 1/4" = 1'-0"



C AHU/EFW CLOSET DETAIL
Scale: 1/4" = 1'-0"

KEYED NOTES

- ① WALL MOUNTED RETURN GRILL. PROVIDE TYPE-X GYP BOARD AT INSIDE WALLS OF CLOSET. SEAL OFF ALL COMBUSTIBLE MATERIALS FROM PLENUM SPACE.
- ② 4 INCH DRYER VENT TO DRYER VENT CAP.
- ③ FAN MANUFACTURER'S WALL VENT.
- ④ ROUTE EXHAUST DUCTS IN SOFFIT OR ABOVE DROP CEILING. PROVIDE CODE REQUIRED SEPARATION TO OPERABLE WINDOWS.
- ⑤ 17x12 SA PLENUM ON TOP OF AHU.
- ⑥ SEE OVERALL MECH PLAN FOR LOCATION OF ALL CONDENSING UNITS.